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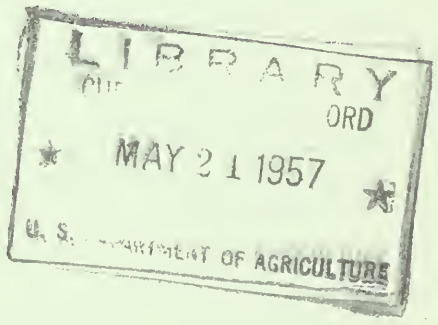
PROSPECTUS

# THE YEARBOOK OF AGRICULTURE 1958

## LAND USE AND OWNERSHIP

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## Please Note

Please read all of this prospectus before you write your chapter.

Manuscripts must be in the editor's hands on or before June 3, 1957.

The editor revises or rewrites manuscripts as he deems necessary and proper.

No chapter known to be ghost written is printed in the Yearbook.

No promise is given now or later that a manuscript will be printed. Rising printing costs (but a fixed appropriation) may require drastic changes in plans at any time.

Special instructions are included for typists. Double-space all parts of a manuscript. Do not run paragraphs over from one page to the next.

Remember the reader!

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# THE YEARBOOK OF AGRICULTURE 1958

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## PURPOSE

Our aim is to inform all Americans about the land resources of the United States, the history of their use and misuse, and the ways in which they should be husbanded and improved for the well-being of coming generations.

We consider our land heritage, its acquisition, its place in the Nation's economic development, and our remaining resource of public lands; the use, management, and tenure of private lands, particularly in the different regions; land income, valuation of land, and financing; prospective needs; emerging problems of ownership and control — tenure arrangements, rural zoning, community planning, and the possible effects of increasing urbanization; arrangements to facilitate the development of public lands; and efforts needed to achieve a better use of our land.

We draw upon the lessons and experience of history, but this is not a book of the past. It is eminently and essentially a book of the present and the future.

An aspect of the situation is given by Malcolm Cowley in his book, The Literary Situation (1954):

> During the first half of the century, and increasingly after World War II, American life was changing in more fashions than most realized.... The land itself was changing as its inhabitants were distributed around the metropolitan centers and along the radiating lines of force that were superhighways. Away from the highways and summer resorts, broad sections of the country were poorer and emptier than they had been in 1900. The settled areas were more thickly settled and, with automobiles moving at high speeds in all directions, they seemed uncomfortably crowded. A thousand Americans and their machines took up as much space as fifty thousand Chinese.

> Fertile land that would be needed if the population kept growing was destroyed each year: not only was it being washed or blown away, as we read so often, but also, in settled regions, it was being covered with factories and housing developments, paved with concrete and asphalt, condemned for pipe lines, excavated for sand and gravel, buried under rocks and debris, flooded for power dams and lakes with bathing beaches, or converted into airfields, golf links, parking lots, drive-in theaters, and automobile junk-yards. Driving through Westchester County, one found it hard to realize that this had been a region of rich farms, like those of Sleepy Hollow, where Ichabod Crane 'rolled his great green eyes over the fat meadow lands, the rich fields of wheat, of rye, of buckwheat, and Indian corn, and the orchards burthened with ruddy fruit.'

The New York Times discussed other aspects in a series of articles that surveyed the increasing urbanization of the United States (January 27 - February 3, 1957).

As a book of impartial science, we advocate no partisan program nor seek to advance the special interest or pleading of a particular unit, service, or department. There is place for differences of opinion, all sides of disputed theories and recommendations, and explorations of plans, projects, and fruitful lines of action.

We approach the task with imagination, a spirit of helpfulness, and a willingness to face future challenges affirmatively and positively. We are not content merely to repeat dull, lifeless ideas. No inhibition, or order, or outworn precept, or useless tradition, or comfortable rut must deter us from the exciting, provocative, useful task before us. Done in an ordinary way, this would be just another dull tome; done as we can do it with inspiration and a lot of hard work, it can be a landmark in American history and a guide for citizens in years to come.

We must bear in mind that we are not writing for persons who already have these details or for persons who cannot or will not improve their own situation or that of their community and Nation. A consequential segment of our readers comprises young people - students, young farmers, boys and girls whose lives soon will be linked closely with the land - and for the young leaders who have courage and vision and (with this Yearbook) the knowledge to create a better society.

NOTES FOR WRITERS

Nearly 300,000 copies of the Yearbook are printed. The book has an estimated million readers. No other publication has the same number and type of readers or offers such an opportunity to a scientist to announce his findings and discuss his work.

The importance of the publication and our subject demands the fulfillment of several obligations and standards in writing, preparation of manuscript, attitude toward the assignment, promptness in submitting contributions and returning proofs, and fairness to all persons and colleagues.

The contributor should bear in mind that the Yearbook is a cooperative venture of the Department of Agriculture, not of one unit.

1. Our readers include farmers; city dwellers and others who have no prior interest in our subject but whose interest might be attracted; students; businessmen; economists; teachers; Government officials and others, who need reference material; housewives; county agents; Congressmen; writers. Among our many readers are only a few learned doctors, but they appreciate clear writing and useful information as much as high school students do.

2. Authors should allow ample time before the time their manuscripts are due for the customary bureau or Department clearance. The editor assumes that when a manuscript is submitted to him it is technically accurate and fully approved.

The deadline for the receipt of all manuscripts by the editor is June 3, 1957. Anyone who has a reservation about meeting that deadline should not accept the invitation to contribute a chapter.

3. We cannot specify the exact length of a chapter. When we planned this book, we could not foresee the extent of rises in printing costs, on which (because our appropriation has not been increased accordingly) the number of pages and the use of illustrations depend. We shall not know until we get cost estimates a few weeks before press time how much space will be available — we are, in effect, planning, writing, and editing in the dark. Although another sharp increase might mean a book of many fewer pages, we hope we can manage to have 500 pages of text (plus preliminary pages, index, and space for chapter titles).

On the basis of 60 chapters, that would mean an average length of 5,400 words. Some chapters will be longer, of course, and some will be shorter. The writer, however, should use all the words he needs to discuss his subject completely, clearly, and interestingly. No one needs to resort to terms like "Space does not permit me to ...."

The important point is to make every word count. Do not waste space on a long introduction. Long sentences are not bad in themselves, but they often indicate redundancy. Avoid summaries that merely repeat earlier material.

Organize your material carefully. Outline your article first; know beforehand what you are going to say; then say it. Get a logical train of thought and follow it. Rework your manuscript several times, asking yourself each time: Is this clear? Is it terse? If your outline is good, there is seldom a need to backtrack (e.g., "as was pointed out in the foregoing paragraph").

Avoid verbosity and jargon in favor of simple, direct English (e.g., "soon" for "in the near future," "We learned" for "on the basis of a series of experiments it was demonstrated that...;" "in summer" instead of "during the warm summer months," and many more).

Avoid, as space wasters, passive verbs. Good paragraphing, so that one discusses only one clearly identified point at a time, saves words. So do strong, active verbs, (e.g., "one can assume" instead of "it would seem possible one could make the assumption that").

4. Some suggestions about choice of words:

Avoid dangling participles (e.g., "Applying pressure to such infected berries, the skin slips away...." should be "Applying pressure, one causes the skin..."). Avoid beginning sentences with this or these when the antecedent is indefinite and remote. Do not overwork since when because or as can be used. Due to requires a definite noun: "The failure was due to lack of study." Avoid clauses like, "Many investigations showed that...." Giving the fact itself on your own responsibility is better. Under Florida conditions and similar phrases are jargon. Problems is overworked. Watch parallel constructions — e.g., "The lesion was brown, sunken, and on the branches" should be "...brown, sunken, and persistent (for a third adjective). That and which often involve meaning, not merely style. Avoid using nouns as adjectives — a common practice that makes for heavy writing

Certain could better be some or a more precise term — at certain intervals: every 3 or 4 days; certain workers: some workers. Areas often is loosely used for districts, counties, localities, States, regions.

Define unusual terms the first time they are used by synonyms in parentheses or within commas or, even better, as a part of the next sentence.

Avoid abbreviations in the text as much as possible.

Do not be afraid of using I and other personal pronouns, which tend to give life to writing and make it more exact. "It was established in experiments at Blank University that...." could be "I learned...."

Avoid prepositional phrases at the beginnings of sentences. "The study began in Florida in 1913...." instead of, "In 1913, a study was started...." Avoid phrases like "last year," "recently," "a few years ago." Be specific as to year; remember this volume will appear in 1958, but will be in circulation much longer than that. Consequently a term like "this spring" is meaningless.

Avoid saying in the text, "Brown's findings were...." or "Smith and Jones disproved the theory...." Instead, gain accuracy and completeness by a phrase like "Lyle P. Brown, in experiments at the Alabama Agricultural Experiment Station, discovered that...."

Science for April 27, 1956 contains an interesting article, "English Style in Scientific Papers," by John R. Baker (pages 713 - 714), which contributors might find helpful.

5. The introduction and conclusion require extra thought. The introduction, the vital paragraph that determines whether the reader will continue reading your article or whether, so to speak, all your effort will be wasted, might well be a short statement of one challenging fact. A good device is a one-sentence paragraph so compact that it requires no internal punctuation. The introduction, besides attracting the reader, lays the groundwork for what follows. Usually questions do not make good introductions. A narrative flavor is good. Avoid long, historical introductions; they are dull, overworked, and usually not pertinent to the main point of the article. It's much better to jump immediately into the article.

We do not use "learned journal" summaries; they waste space. They are unnecessary if the article is properly written. Experienced writers save out a particularly good fact from the main body for use in the conclusion — a fact that grows out of the text, looks forward, summarizes the main thought succinctly, and leaves a good feeling with the reader. Try for a pointed, crisp conclusion.

6. Material submitted for publication in the Yearbook must not be published or offered for publication elsewhere before it is printed in the Yearbook or is rejected by the editor. Please do not give your manuscript to another publisher or writer as background or ask the editor if you may do so.

7. The Yearbook Committee plans the scope, content, and structure of the volume and advises the editor on problems of technical accuracy, suitability, and completeness. Problems of writing, presentation, duplication, illustration, and such are handled directly by author and editor after an article is submitted, not through a Committee Member or bureau official, although the editor usually keeps them informed of such details. There must always be the possibility of direct exchange between author and editor. Proofs particularly must be returned directly and expeditiously.

All manuscripts are subject to revision by the editor. Usually they are returned to the authors before publication for comments, approval, additions (to keep them up-to-date), and corrections. Changes, however extensive, are always subject to the author's full, if not enthusiastic, approval.

Changes are made primarily to remove duplication and repetition, eliminate wordiness and similar faults, enhance readability, and remove phrases, terms, examples, and such that are not objectionable in themselves but may be used in too many articles.

8. Contributors and other interested persons are invited to submit to Committee Members suggestions for papers not listed in this Prospectus, which is not offered as a final, static document. We want our book to be up-to-date, fresh, living, and different — not a rehash of old material.

9. Because the actual printing may take at least 6 months and the editing up to 6 months more, as much as a year elapses between the writing of an article and the appearance of the Yearbook. Authors, therefore, should follow through on their manuscripts and be sure that in each of its steps it remains accurate and up-to-date as of that particular date.

10. This prospectus is not a secret or restricted document, but a great deal of effort is saved if each person to whom it is sent will remember that it is for his own use only and not for wide discussion or announcement.

11. Entries in this outline are topics, not necessarily the titles of the articles. Titles that authors use on their manuscripts should be short, accurate, and attractive. Changes may be made in them to conform to typographic style yet to be chosen or to achieve succinctness and directness.

12. Subheads will follow the practice of recent Yearbooks. They are merely a line of space; the two or three key words that begin the next line are set in small capitals. The device saves up to 30 pages in the book and improves the appearance, particularly because of our narrow columns. Do not, therefore, use subheads as such in your manuscript. Subheads cannot be a substitute for good organization of thought and proper transition.

13. We seldom use footnotes.

14. Lack of space will preclude the bibliographies and lists of publications for further reading that we have printed in previous Yearbooks. Outstanding publications, which writers consider essential or of great historical importance, may be mentioned in the text; such references, needless to say, must be accurate and complete as to title, author, publisher, and year.

15. Charts and line drawings are welcome. We cannot use color photographs this year, and the use of black-and-white photographs is highly unlikely. (If a miracle should happen, we shall ask contributors later to submit photographs.)

We try to get along without tables in the text. They are expensive to set, hard to fit into our narrow columns, and generally unattractive. Most readers skip tables. Often you can present the details in them more effectively as written matter; often they are submitted merely out of habit. If tables are submitted, nevertheless, they must be on separate sheets by themselves, no matter how small. We cannot use what are generally called "text tables." Tables, like charts and other "art" items, are set and handled separately. Do not use phrases like Fig. 3 or See Chart 6 in the text. All items — text, charts, tables — should be self-contained, with a minimum of cross-reference.

16. Please submit with your manuscript a terse author's note that gives your name as you wish it to be printed, your position, and affiliation. To save space, the notes will have to be grouped at the end of the book, as we did in Marketing, the 1954 Yearbook of Agriculture. Example: John C. McGillicuddy Director, Office of Ways and Means, Department of Agriculture, Beltsville, Md. Our purpose is to identify the writer and indicate his address if any reader would like to congratulate him on his fine presentation. If you wish, you may add other details about yourself (although not in sentence form — e.g., Formerly professor of land economics, Blank University; author, You and Your Ulcer).

17. Details of obtaining reprints are not handled by the editor of the Yearbook. Consult your division of information regarding reprints or (if you are not in The Department of Agriculture) the Superintendent of Documents when the Yearbook is in print.

18. To save time and effort of all hands, it is suggested that contributors read some chapters in recent Yearbooks. (No professional writer would dream of submitting a manuscript to a magazine without reading some issues to ascertain its scope, flavor, makeup, and general style of writing.)

Do not follow too closely, however, any trick of writing, style of expression, or mechanical details you may discover in previous Yearbooks. Each Yearbook should be different from its predecessors, and an improvement over them. Furthermore, a writer's own personality, flavor, and expressions are highly prized, and the editor makes every effort to preserve them.

Warning: Some chapters listed in this prospectus may turn out to contain an undue amount of duplication of material in Water, Trees (which should be consulted), and the 1957 Yearbook of Agriculture, galley proofs of which will be supplied 1958 contributors who ask the editor for them.

Again, and always: Remember the reader! Nothing can justify dullness and obscurity.

The following notes on writing are excerpts from a booklet "The Publication of Research", issued by the Agricultural Research Administration in January 1945; the booklet reproduces a talk by the late Dr. E. W. Allen, who was Chief of the Office of Experiment Stations from 1915 to 1929:

The purpose of writing is not only to express ideas, but to communicate them to others. Science is not inherently dull, heavy, and hard to comprehend; it is essentially fascinating, understandable, and full of charm. It is simple, after it has been worked out, and is capable of being stated in concise terms easily understood.

But to succeed in conveying ideas correctly and in a readable way requires considerable effort on the part of most of us. It calls for time to do it well. It is just as important as making more experiments, although the worker may not like it as well, and it is quite as worthy of his best effort.

The aim in publishing research, as well as in carrying it on, is to leave the field clearer than you found it. If that cannot be done it is doubtful whether a scientific paper is justified. There cannot be clear writing without clear thinking, and when one learns to write clearly, he will in the process learn to think clearly. Indeed it may be doubted whether thought and its expression can be separated.

Clearness is absolutely essential in technical writing. It is not enough to use language that may be understood — it is necessary to use language that cannot be misunderstood.

Having something to say, therefore, say it in your own way, provided you use good diction, the right word, and a simple form of expression.

Remember the reader. Be sympathetic toward him. He must make some effort, but he is not bound to follow you through. The writer has not the same hold on his audience that the speaker has.

Brevity is another important quality of a technical paper. This does not mean that the presentation should not be adequate to a clear understanding of what is reported and ability of the reader to judge the merits of the contribution; but the length should be proportionate to the actual contribution. Nowhere are more skill and judgment required.

The question of what to leave out will be one for very careful consideration, which frequently cannot be settled at the first writing. On review it may be found that considerable may be left out without sacrificing anything really essential. Descriptions and statements of facts gain force by brevity and by sticking quite closely to the real kernel of the subject.

As a rule, the more definitely a fact has been established by an investigation, the more directly and simply it can be presented. It is the doubtful ones that have to be hedged about with explanations, qualifications, and cautions.

The style of the technical paper should be simple, straightforward, and dignified. It should suggest neither a fairy tale, a sensational newspaper story, nor a sermon, but rather a simple, unaffected, and uncolored account of work done and its application. Accuracy and clearness ought never to be sacrificed to a supposedly more popular style. The presentation should be such as to win the reader's confidence in the thoroughness and reliability of the work reported.

# NOTES ON TYPING MANUSCRIPTS

The Style Manual (1953 Revision) of the Government Printing Office governs capitalization, compounding, spelling, abbreviations, numerals, punctuation, syllabication, and plant names.

Please submit to the editor the ribbon copy and the first copy. The ribbon copy should be on good bond paper, not second sheets or onion skin, on which one can readily write with ink or pencil. The carbon copy, which is used in editing (not merely for filing), must be perfectly legible. Use a fresh black ribbon. Please change carbons often.

All material should be double-spaced; single spacing is not permitted anywhere — not even in captions, at the bottoms of pages, or in tables. (Single spacing allows no room for editing or marking instructions to the printer.)

Do not run a paragraph over from one page to the next. Pages with runover paragraphs cannot be sent to the printer. If a paragraph is too long for one page, split it arbitrarily if necessary. Very likely it's a poor paragraph anyway if it's that long. Do not use Scotch tape for any purpose on manuscripts.

Leave about 3 inches of space at the top of the first page and 1 1/2-inch margins at the sides. Other pages should have 1 1/2-inch margins at the top and sides. Don't cramp pages, please; ample space is needed for marking type and instructions to the printer.

The number given the manuscript in this prospectus should appear in the upper right-hand corner of the first page.

Also, at the top right of page 1 of the manuscript, write in pencil the number of words the manuscript contains. Count all words, including a, the, etc. Include in the total the equivalent in words of any tables. If, say, there is one full-page table, include in the total the number of words that a normal page of text contains.

Underscoring means italics — use it sparingly and advisedly, and not for emphasis.

Do not staple the pages of the manuscript together. Use paper clips.

Captions for photographs go on separate sheets — one caption only on a page. Tables, author's note, and bibliography also go on separate sheets. Do not write with hard pencil on the backs of photographs.

Indicate subheads by skipping a few lines and underlining the first few words — three lines under letters that are capitalized and two lines under the others (to indicate small capitals). The lines may be drawn in ink.

The sample pages of manuscript that follow show a model page 1 and a later page, on which a subhead occurs.

#26

3,560 words

# How We Develop Insecticides

Jacques McGillicuddy

New insecticides are developed in two ways.

The first is by determining the structure of the active principles of plants recognized as toxic to insects. Then the principles or other compounds closely related to them are synthesized — put together again to make the whole.

The second is by testing compounds of known structure and unknown toxicity upon several species of insects and selecting the ones that are effective.

The first method starts with a material of known toxicity but unknown structure. The second starts with a compound of known structure but unknown toxic value.

(Sample manuscript, continued)

The division of insecticide investigations of the Bureau of Entomology and Plant Quarantine received from Mexico City in 1943 the roots of a plant reported to be used by Mexicans as an insecticide.

The first synthetic organic compounds used to kill insects were employed as fumigants.

Carbon disulfide, made by the direct combination of carbon and sulfur, may be regarded as one of the simplest organic compounds. It was first used as an insecticide nearly 100 years ago in France. Paradichlorobenzene, originally a byproduct in the manufacture of chlorobenzene, was used as a substitute for naphthalene in combating clothes moths in Germany in 1911....

CONDENSED OUTLINE

I. Our Land Heritage
- The Importance of Land: The Problem
- Our Wealth of Land Resources
- How We Use our Land
- How We Acquired Our Land
- Land in the Economic Development of the Nation
- Our Remaining Heritage of Public Lands

II. The Use, Management, and Tenure of Private Lands
- The Different Uses of Farm Lands
- Typical Farm Situations in Six Major Farming Regions
- Trends in Kinds and Size of Farms
- Part-time and Residential Farms
- Development of the American Tenure System
- Ownership of Farmland
- Tenure of Farm Operators
- Ownership and Operation of Private Forest Lands
- Use and Occupancy of Nonagricultural Lands

III. The Use and Management of Public Lands--National Forests, Bureau of Land Management Lands, Other Public Lands

IV. Land Income and Valuation of Land
- Distribution of Income from Land
- Valuation of Land
- Appraisal of Land
- Classification of Land
- Current Land Values
- The Mechanics of Land Transfers
- Financing Ownership of Land
- Insurance Against Loss of Land Products and Services
- Land in Relation to Farm Programs

V. Land Resources in Relation to Prospective Needs
- How Needs for Food and Fiber Have Been Met
- Prospective Demands for Food and Fiber
- Prospective Demands for Forest Products
- Prospective Demands for Other Uses of Land
- Alternative Ways of Meeting the Demands
- Meeting Demands by Advances in Agricultural Technology
- Technological Advances in Relation to Nonagricultural Uses
- Conservation of Land and Water Resources
- Public Investment in Resource Development
- Assistance to Individual Farmers
- Group Programs for Land and Water Management
- Watershed Protection
- Programs for Forest Management
- Irrigation in Low Rainfall Areas
- Flood Control and Drainage
- Land Clearing
- Balanced Use and Development of Land and Water Resources

CONDENSED OUTLINE - Continued

VI. Emerging Problems of Ownership and Control
Tenure Arrangements to Facilitate Better Use of Land
Getting Established in Farming
Zoning and Other Measures to Prevent Undesirable Uses
Group Action to Develop and Protect Land
Arrangements to Facilitate the Use, Development and Protection of Public Lands

VII. Use and Ownership of Land in Alaska, Hawaii, and Puerto Rico

VIII. Toward the Better Use of Land

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Rather extensive notes are presented in the following pages about the possible scope of each chapter. The main purpose is to give all contributors a conspectus of the content and organization of the book in order to minimize duplication, which is one of the hardest problems in editing and writing an anthology like this, and to indicate likely gaps and deficiencies. Contributors are invited to suggest additional chapters that will make the presentation more complete and useful, particularly because developments are likely in this dynamic, ever-changing field.

A contributor should read the entire prospectus before he outlines his own chapter. He should be careful to omit material assigned to another chapter, but he should not feel that the notes for his chapter are in themselves a complete, well-integrated, or logical outline; they are merely an indication of scope. They would defeat their purpose if they lead a contributor to assume his task is only to discuss the points listed or if they become a ceiling to his efforts or otherwise keep him from exploring all facets of his assignment.

Contributors of chapters in a section may find it useful to confer with others who are writing about related topics or to exchange preliminary outlines or first drafts.

# I. OUR LAND HERITAGE

## 1. The Importance of Land

An introduction that places the role of land in sharp perspective. It indicates that this is not a book dealing with soils or the physical aspects of land use, but rather with the economic aspects of use and control of land. It leads into the subject without summarizing the chapters that follow. Major objectives are to attract the reader and give him a basic knowledge for understanding the subject and its complexities.

The importance of land to individual users and the Nation. The economic concept of land as contrasted to the physical. The separation of the economic problems of land into use and control.

Land is important because of its ability to diminish the difference between what man wants and what he has--man has four resources with which to satisfy his wants: His energy, his ingenuity, some legacy in the form of capital goods, and his natural environment. Labor, its intelligent application, and basic resources are fundamental, but none of them can make a contribution without the other three. As land can limit, either by being fixed in extent or through the uses to which it is directed, it must be used efficiently and its contribution must be widely dispersed if it is to make the maximum contribution to our welfare.

The consideration of the economic concept of land will emphasize the attributes of economic productivity and location. The role of land in production and distribution. Land use, land tenure, and their interrelationship. Land as space; the spatially related problems of transportation, communication, and (perhaps) such social services as schools, churches, and medical facilities.

The discussion of land will deal with how important our land has been to us as a Nation, how we have distributed control and claims to land income, how land uses have changed over the years, the progress we have made, and the problems we have created. The need for considering how our land resources can be used and developed in the future in order that our natural heritage, which has contributed so much in the past, and is so largely responsible for our present economic position, will make the fullest possible contribution to the national welfare.

An indication will be given of the organization of the book: First, the historical standpoint; second, an account of the present situation; and third, discussion of land problems as these appear to be emerging.

This chapter will fulfill its purpose if it is written in completely nontechnical language with no jargon, is interesting and provocative to persons without any training in economics, and gives many examples. Because it is a chapter primarily of ideas (which many persons find less interesting and harder to grasp than more finite objects), it should include as

as many references as possible to people, the reader, facts, events, and things. It must have a clear, sharp framework, which is achieved by a perfect outline and several rewritings of the manuscript.

2. Our Wealth of Land Resources

The extent and types of land in the United States; variations in soil and climate, the wide latitudes in rainfall and temperature. The range from the subtropical to the desert, permits a wide range in production of farm and forest products. Maps showing variations in climate and in land resources would be helpful. The importance of terrain and waterways in facilitating development of transportation and communication. Pertinent aspects of geography and economic geography.

3. How We Use Our Land

The current picture of major land uses--crops, grazing, and forestry occupy most of our 1,904 million acres of land surface, but large areas with special location, scenic, or other advantages are devoted to urban, recreation, transportation, mining, and other nonagricultural uses. Recent trends in land use. Geographic differences as related to the physical variations. Statistics, charts, and maps will show the major uses.

The basic statistics developed for this chapter will be made available to writers of other chapters in order to prevent inconsistencies in statistical data.

4. How We Acquired Our Land

The acquisition of public domain from the Thirteen Colonies, the Louisiana Purchase, the Spanish Settlements, the Annexation of Texas, the Gadsden Purchase, the Oregon Settlement, the Settlement of Indian Claims, and the acquisition of the Territories. The presentation will be historical in nature, concerning types of land, dates, means, and methods of acquisition--a geographical history of the United States. It might well be entirely narrative--told as much as possible in terms of explorers and persons who had major roles in the acquisitions.

5. Land in the Economic Development of the Nation

The position of Jefferson and Hamilton with respect to the public domain, the early emergence of the family farm goal, the use of public lands in establishing communications (the National Pike and railroad grants) and support of education (the school lands and the grants for the

land-grant colleges), the homestead, desert land, and grazing acts. How the undeveloped land resources were used at the end of the Revolution to further our economic and political development, the competing nature of these ends, and the compromises that were effected. The later role of agriculture through agricultural exports, in acquiring the foreign capital necessary to transform the United States from an agrarian to an industrial Nation. Data on the alienation of the public domain. Land policy of 1790 to 1910, designed to foster settlement and rapid development and exploitation of virgin resources, with accent on private property in fee simple ownership. The lack of restraint on exploitation of farm lands, forests, and mineral resources. The closing of the frontier and the consequent effects upon land values and levels of tenancy. The rapid increase in indebtedness for land purchase. The apprehension about the rapid use of forests. Factors leading to the Forest Reserve Act of 1891. The National Conservation Conference of 1908. The factors resulting in the Desert Land Acts of 1888 and 1899, the Carey Act of 1894, and the Newlands Reclamation Act of 1902. Maps.

6. Our Remaining Heritage of Public Lands

The origins and approximate area and location of each of the major kinds of public land (Indian Reservations, national forests, parks, etc.) The unsuitability for private ownership of much of the publicly-owned land. The public interest in protecting strategic land resources--e.g., watersheds, public recreation areas, etc. A map showing location of public lands will emphasize concentration in the Western States. The total area of public lands, Federal, State, county, and local; the land types and the multiplicity of private and public uses served by public lands.

Other chapters to be suggested by contributors and Committee Members:

6a.

6b.

6c.

## II. THE USE, MANAGEMENT, AND TENURE OF PRIVATE LANDS

7. The Different Uses of Farm Lands

The role of land in farming. How different types of land are combined with other resources into farms and ranches. The geographic variations in farming in relation to available land resources. The physical factors, e.g., climate, soil, topography, elevation, and water supply. The economic and institutional factors, e.g., proximity to markets and communication, ownership patterns, and private and public investments. Individual factors, e.g., personal preferences and skills in determining the type of output of farms in different areas. The relationship between natural resources and the type, size, tenure, and relative profitableness of farms in different areas. An introductory chapter that must not duplicate directly material presented in the chapters that follow.

8. Northern Dairy Region

9. Corn Belt

10. Cotton and Tobacco Regions

11. Wheat Regions

12. Western Grazing Region

13. General Farming Region

These six articles apply the background developed in chapter 7 to typical farm situations in major farming regions. Each will deal with conditions influencing the farming in the region and illustrate with typical farm situations the type and size of farm, total investment, value of land and buildings, value of machinery and livestock, hours worked per year, livestock kept, income, and expenses. The reader should be cautioned about the wide variations from the illustrative cases that are found in each region. The recent rapid changes in farming will be emphasized and related to the changing role of land in the different areas, and to the ratio of land value to the value of the labor, machinery, and livestock inputs.

The usual tenure arrangements and the land financing arrangements suitable to each type of farming. Flexibility in tenure and financing to take into account yield and price variability, the length of tenure, and the methods of sharing costs and returns needed on rented farms. Economy of irrigated land, especially in the wheat areas and western grazing areas.

The major objective of these articles is to show the structure of commercial farming in each region and how land is combined with other resources into a farm business for the production of food and fiber, and to provide incomes for those who produce farm products.

14. Trends in Kinds and Sizes of Farms

The national trends in number, sizes, economic classes, and types of farms. The classification should distinguish between farms operated primarily for income and those primarily providing a place to live. This article then will emphasize the farms operated primarily for income. It will consider the increasing sizes of family farms, the economy of scale in farming, and the future prospects of family farms in relation to larger scale business units. (Warning: Guard against duplication!)

15. Part-time and Residential Farms

The growing importance of part-time and residential farms. Their special land use and management problems, related to their primary interests.

16. Development of the American Tenure System

The bundle-of-rights concept. Relation of early American tenure to English feudal tenure. Development of early English and Spanish colonial land tenure systems. Common law influences, and economic and political considerations on the tenure system. Barring of primogeniture and entail. Reservation of public interest in private property rights. Development of police power and eminent domain. Analytical description of the present American tenure system with its emphasis on owner-operatorship of family farms.

17. Ownership of Farmland

Within the limits of data now being assembled, data obtained in the 1950 Farm Mortgage Survey and a projected 1957 Farm Ownership Survey, this article will present information on the ownership of farmlands and trends in ownership. It will be necessary to use broad classes of owners, i.e., government (Federal, State, and local), corporate, and individual for the

current picture. The 1947 data showing the occupations of owners and the functioning of the agricultural ladder, and the means of acquiring ownership will have utility in an article of this type. The second part will deal with the farm real estate debt situation, including farmers' debts and equities, and nonfarmer investments in claims to land. The terms and conditions of mortgages and purchase contracts from the current and historical standpoints.

18. Tenure of Farm Operators

How farmland is held, distribution of farmland, number of farms, cropland harvested, value of land and buildings, production, type of farming, and size of farm by tenure of operator. Present trends in the tenure status of farm operators and reasons for changes. Characteristics of farm operators, such as age, color, and some other descriptive features.

19. Use and Occupancy of Nonagricultural Lands

Importance of such nonagricultural uses as urban land, mineral lands, highways, reservoirs, and other nonagricultural uses. The chief concern will be with the allocation of land between agricultural and urban and other nonagricultural uses; and with the location effects of these uses on markets for farm and forest products. The potential supply of urban land might be discussed. The physical land surface is not the determining factor in locating cities. With sufficient capital investment, any land can be made suitable for urban use. Cities are located on hills, in valleys, on piling (New Orleans), or even behind seawalls. Natural advantages facilitating communication, however, do play an important role in determining the location and size of cities.

20. Ownership and Operation of Private Forest Lands

The importance of privately held forest lands in the timber industry--nearly four-fifths of the commercial forest area is privately owned. Farm woodlots and other private forest land. Reforestation of cropland under conservation reserve program. The timber producing quality of the privately held land as contrasted to the publicly held land. The economic problems of private forestry. The importance of the time element, i.e., the length of the production period as compared to life expectancy of man, the economy of scale, the need for undisturbed tenure, the flexibility in harvest, the problems of taxation of growing forests so as to preclude premature harvests, and the high degree of uncertainty attaching to timber product prices at the time of harvest. The basis of the public interest in the use of forest land. The importance of forest products in the national economy and the elements of timber production, particularly the time factor, that act as obstacles to efficient use of forestry resources. The need for an alloca-

tion of use over time; for providing cover in cutover and burned over areas to prevent erosion, flooding, and downstream silting; for assuring the replanting of harvested areas; the importance of sustained yield operations; and of fire protection. The need for modifications in the usual method of financing and taxing of forest land should be dealt with. (N.B.: Cf. chapters in previous Yearbooks; guard against duplication and standard material and presentation.)

Other chapters to be suggested by contributors and Committee Members:

20a

20b

20c

## III. THE USE AND MANAGEMENT OF PUBLIC LANDS

### 21. The Use and Management of National Forests

The multiplicity of purposes served by national forests. The methods of administering the national forests to serve multipurpose needs; the means of protecting forest land, with emphasis on multiple uses; means of moving forest products into the markets; the use of scientific methods in planting, protecting, and harvesting; some comparisons between public forests and privately held forest land. (Cf. the chapters on multiple use in Trees; do not repeat!)

### 22. The Use and Management of Bureau of Land Management Lands

History of the Bureau of Land Management lands; factors giving rise to the Taylor Grazing Act, purposes of the Act, to reduce destructive grazing; orderly use and development of grazing lands and stabilization of the livestock industry depending upon the public range; the formation of grazing districts; method of issuing grazing permits; use of grazing fees to improve the range; trading of unappropriated public lands outside of districts for private lands within the districts; administration of Sec. 15 lands.

### 23. The Use and Management of Other Public Lands

The extent and use of land under the control of such agencies as the Department of Defense and the Department of the Interior (including Indian and Park lands but excluding BLM lands); the purposes to which the land use is directed, and the means of acquiring and disposing of lands for these purposes. Special management problems associated with land of this type. The use and management of State and county owned rural public lands.

Other chapters to be suggested by contributors and Committee Members:

23a.

23b.

23c.

## IV. LAND INCOME AND VALUATION OF LAND

### 24. Distribution of Income From Land

The factors affecting land income, the methods of transferring land income, and the amount of land income, in both absolute terms and relative to the total agricultural output. A definition of land income as that part of output paid for or attributable to the use of land; the theoretical origins of land income. The effect of such forces as the level of demand for agricultural products; inherent productivity, site, situation; relative scarcity of land or comparable grades; substitution of other factors, limited alternatives for use of land, quantity of other factors used in conjunction with land, labor-land ratios, capital land ratios, and shifts in demand for agricultural products will be taken into account. Methods of transferring land income; the transfer of current returns through the payment of rent. A rental return accrues automatically to the owner operator. Expected future returns are transferred through the sale of rights to the use of land. The effect of different methods of taxation on land income. Data on the current and past division of agricultural income, between land and other factors. Trends in land income and the land share of the total income.

### 25. Valuation of Land

The economic function of the land market in allocating land between uses and users. The principles of valuation and the unique characteristics of land as these affect the land market as a factor market. The relation of land values to land rent. Factors affecting the level of land values. The advantages and disadvantages of high land values. The impact of sharp changes in level of values. The factors affecting values of specific tracts; the importance of natural productivity, location, etc. Mineral rights and their relationship to agricultural values.

### 26. Appraisal of Land

Techniques of land appraisal and valuation for sale, credit, and taxation purposes.

### 27. Classification of Land

Techniques of land classification for valuation, tax assessment, land use capability, and erosion control, farm units, land use adjustment, and for estimating irrigation, drainage, and flood control benefits. (N.B.: Some of this material has been given in 1957, 1954, and other Yearbooks, and should not be duplicated extensively.

28. Current Values of Land

Current land prices and land market activities and trends since 1941. Usual aspects of current market. (N.B.: Current must be used carefully to insure clarity as to year, etc.; cf. instruction regarding "recent," etc.)

29. The Mechanics of Land Transfers

The legal identification of land and the instruments used for its conveyance. Rights in land are conveyed with respect to boundaries in space and in time; rights in land can be divided vertically and horizontally, and all or part of these rights can be abrogated for all time or for a specified period. The role of public records in accounting for rights in land. The rectangular survey system and the metes and bounds system as the principal means of measuring land. Surface rights as a means of delimiting subsurface rights and supersurface rights. The identification of immovable capital items, e.g., houses, barns, fences, water systems, with the land surface as a part of real property. The lease as an instrument of transfer, the means of effecting a temporary abrogation of rights. The essential elements of leasing, i.e., description of the property conveyed, restriction upon its use, if any, the time period involved, and the consideration. Items such as notice, automatic renewal, and the elements of landlord-tenant law. Such items as warranty deeds, quitclaim deeds, and purchase contracts, exercise of eminent domain, methods of clearing title and of effecting involuntary transfers through foreclosure and tax sales. The circumstances for the use of each of these devices.

30. Financing Ownership of Land

The function of the real estate mortgage market and the operations of private, cooperative, quasi-public and public lenders; early experiences in lending practices--terms of repayment, interest rates, foreclosures; problems associated with extension of credit to an industry influenced by highly variable prices and subject to severe weather hazards; conditions giving rise to the Federal Farm Loan Act of 1916, the Emergency Farm Mortgage Act of 1933, the Bankhead-Jones Farm Tenant Act of 1937 and later legislative provisions; introduction of amortization and flexibility into repayment procedures; amounts loaned, amounts repaid, and foreclosure experiences of different types of lenders. Forest credit and credit for land conservation and development.

31. Insurance Against Losses of Land Products and Services

Crop insurance, flood insurance, fire insurance on forests and crops, and other forms of insurance of land products or services.

32. Land in Relation to Farm Programs

The strategic role of land in administration of farm programs. Contrasts in the operation of Government programs in the urban versus the agricultural sectors; in the urban sector, benefits of the programs attach to the individual, e.g., minimum wage, maximum hour, NLRB programs, while in agriculture the benefits accrue through identification with land. The operation of programs such as acreage allotments, marketing quotas, and federal milk marketing orders, showing that prices are maintained by restricting (either directly or indirectly) the quantity of land used and indicating that the benefits may appear in land values or rents. The role of the tenure system in fixing the incidence of benefits of public programs; the extent that program benefits appear in the land values or rents, future owners, future tenants, and current tenants are left no better off. Similar observations can be made for flood control, irrigation, reclamation, drainage projects, and grazing permits on public lands. This chapter will have to be largely of a theoretical, question-raising nature, as little or no research has been done in this area, despite the long history of the operation of Government programs through land.

Other chapters to be suggested by contributors and Committee Members:

32a.

32b.

32c.

## V. LAND RESOURCES IN RELATION TO PROSPECTIVE NEEDS

### 33. How Needs for Food and Fiber Have Been Met

Present production and past trends; recent trends in production per acre and per animal and how the increases have been achieved; shifts in production; present production and immediate prospects in relation to market demands.

### 34. Prospective Demands for Food and Fiber

The importance of population trends in orienting land policies. The need for considering both population trends in the United States and the rest of the world, as food and fiber move in a world market and the United States has a comparative advantage in food production. Population projections will be presented for 1975 and 2000. It is expected that different estimates, based upon different assumptions will be offered. Other factors influencing demand, including emerging changes in consumer preferences, such as changing preferences for meat and dairy products. Demand projections then will be summarized for 1975 and in less detail for the year 2000. The recent projections of food and fiber demands by 1975 will furnish much of the background for this chapter.

### 35. Prospective Demand for Forest Products and Services

The importance of forest products in the national economy, the quantity and quality of our timber resources, the economic problems peculiar to timber demands, and the special interest of the public in our timber resources. Estimates of future demand for forest products would then be made for years 1975 and 2000, citing new uses developing for wood, and the expected requirements in construction and housing. The recent projections will furnish much of the background for this article. A new, fresh approach to an important topic.

### 36. Prospective Demand for Other Uses of Land

An attempt to project nonagricultural uses and their impact on the agricultural land base. The impact of increasing population on demand for living space, recreation, and other uses. Consideration of alternative sites for some of the nonagricultural uses, and the possible need for prevention of encroachment on productive agricultural land when suitable alternative sites are available.

## 37. Alternative Ways of Meeting the Demands

A general article on the various ways in which the future demand for the products and services of land may be met. It would serve as an introduction to the articles on specific ways of meeting demands that follow. It would discuss the overall prospects and possible effects of improvements in technology, land improvement and development where and when needed, shifts in major uses of land, and possible regulatory measures to protect against destructive exploitation. Warning: "General" or "introductory" chapters like this serve no purpose if they are too general or merely repeat or summarize chapters that follow. Their main purpose is to define, coordinate, raise problems and questions. They require unusually good planning and thinking.

## 38. Meeting Demands by Advances in Agricultural Technology

Some technical advances serve as a substitute for land, and in that way lessen demand for land. Others increase demand for land in specific uses. Developments such as increased use of fertilizer, supplemental irrigation, disease resistant and higher yielding plant varieties, more effective machines for producing and handling products, and new labor and management skills can increase the rate of substitution of labor and capital for land in the production process. These innovations may also make possible shifts in land use. Land that was marginal or submarginal for a specific use may become supramarginal as the result of the development of a new technique or new form of capital. The need for combining several new techniques into improved systems of farming in order to realize maximum results. The need for improvement of technical and management skills in order to benefit from adoption of technical advances, because farming is becoming a complex business that requires large capital investments and high current operating expenses. The need for basic research to develop the necessary technical information to meet increasing demands for efficient production of food, fiber, and timber; also the need for economic research to indicate how technical advances can result in lasting benefits to farmers, and how needed land-use shifts can be undertaken with resulting improvements in income. Specific examples of recent accomplishments or work under way will bring out possibilities.

## 39. Technological Advances in Relation to Nonagricultural Uses

This chapter will parallel the discussion of technological advances in agriculture. It will consider the potentialities of advances that will increase the nonagricultural services of land. The effect of improved transportation facilities upon the demand for land; development of rapid transit systems, automobiles, expressways, electrification, and similar improvements have permitted cities to expand horizontally and have reduced the need for vertical expansion. This improvement in communication has

resulted in increased demand for land for urban purposes and for highways, industry, etc. In the same manner, improved transportation has resulted in an increase in demand for land for part-time farming, rural residence, and for recreational purposes.

Warning: Chapters 40, 41, 42, 43, 44, 45, 46, and 47, might easily duplicate material in recent Yearbooks unless writers take pains to present new, fresh developments and research--not a rehash of old stuff. These chapters are needed to make a complete book, but writers must relate them to the present subject and must avoid the standard presentations of their respective bureaus.

## 40. Conservation of Land and Water Resources

The role of conservation in meeting future demands for farm and forest products. It will set the framework for some of the articles that follow. The allocation of resources over time, expectations, as these may be influenced by changes in demand, and the effects of technological progress in production and the development of substitute resources; the classification of resources into "stock" and "flow" types and the separate treatment of allocation involved in each. Individual and public interests in conservation and the difference between the two. The conflict between the time preference of the individual and the same time preference of society. The need for protection against both unforeseen and long-term needs; justification of the strong position that the Federal Government has taken in conservation problems since 1908.

## 41. Public Investment in Resource Development

The problems centering around public investment in land and water resource conservation, development, and management that may be needed to meet demands for farm and forest products. It will cover all types of public investment including assistance to individual operators and the large-scale land and water development programs. The experience to date in project authorization and evaluation, and summarize current thinking as evidenced by recent reports of various commissions and committees.

## 42. Programs for Assistance to Individual Farmers

The measures available to farmers to improve the level of conservation and land use adjustment on individual farms. Help that is available from the SCS, ACPS, the Soil Bank, and the Land Grant College System in determining land use adjustment, rearrangement of fields and fences, livestock utilization, laying out terraces and waterways, erection of water

control structures, use of cover crops, and management planning for income improvement which can be employed on a specific farm independently of measures used on other farms. (Assistance in forest management would be covered in chapter 45.) Special warning: This chapter must be more than the usual justifications, lines of authority, summaries of work done, etc.

43. Group Programs for Land and Water Management

Conservation and other programs for meeting demands that encompass two or more farms; the basis for such programs in the occurrence of offsite benefits and costs; and the types and operations of these programs. Conservancy districts, the small watershed program, and any other conservation or adjustment program requiring group participation or sanction to achieve its objective. The growing need for interfarm programs and need for modifications of the institutional environment to permit these programs to function in an efficient manner would be emphasized. Cf. material in Water and 1957 Yearbook.

44. Watershed Protection

The need for watershed protection, special problems associated with watershed protection, rates of reduction in erosion achievable by various water control measures, costs of watershed protection, areas where an extension of watershed protection is feasible, areas of land protected by watershed programs. (The author should consult the editor before writing this chapter.)

45. Programs for Forest Management

Special problems of protection and management of forest areas. Assistance to individual operators as well as group programs. (Cf. chapters in Trees and Water.)

46. Irrigation in Areas of Low Rainfall

The area of land for which water would be available and that could be irrigated successfully in arid and other low-rainfall areas, and thus shifted upward in use, if needed to meet demands. Information on the production potential should be included. The present experience with irrigation. The capital investment required for an effective program of irrigation for lands not previously used for crop production. (Cf. chapters in Water and 1957 Yearbook.)

47. Flood Control and Drainage

The land subject to flooding. Gains in production that could be achieved by reduction in flooding. Estimated costs of reducing the flood hazard. (Cf. chapters in Trees, Water, and 1957 Yearbook.)

48. Land Clearing

The acreage of land that could be shifted from timber to crop or pasture land if desirable, the potential productivity of such land, and the costs of effecting the transfer in use.

49. Balanced Use and Development of Land and Water Resources

The conclusions reached in articles 33 to 48. The need for continuing analyses of alternative ways of meeting demands for farm and forest products. An attempt to project demands for future uses of land in different parts of the country and provide some indication as to how they might be met. The potential competition among rural versus urban, farming versus forestry, crops versus grazing, and farming versus special uses. The need for reserve capacity in land to meet unforeseen emergencies and to provide for long-term future needs. Because the market for land and its products and services encompasses only the demands which can be foreseen, provision for reserve capacity requires public consideration of its importance and how to provide for it. The question of providing reserve capacity is also involved in allocation of land among major uses, and in conservation and improvement programs. A highly important chapter that will do much more than merely summarize the previous chapters, whose content the writer should know beforehand.

Other chapters to be suggested by contributors and Committee Members:

49a.

49b.

49c.

## VI. EMERGING PROBLEMS OF OWNERSHIP AND CONTROL

### 50. Tenure Arrangements to Facilitate Better Use of Farmland

The need for tenure improvements that will permit farm enlargement where needed as population shifts to urban employment, give security of tenure necessary for planning ahead, and permit effective and profitable adoption of technical improvements. Problems arising from high land values and larger farms; the consequent need for heavy investment in land per farm. (Cf. chapter 18.)

### 51. Getting Established in Farming

The problems faced by young people who want to get established in farming and who have potentialities for success if they can gain a foothold. The competitive position of beginning farmers may be considerably weaker than that of established operators bidding for land with which to enlarge their farms. The action in real estate rental and purchase markets serving to allocate access to farmland among individual users, with special reference to the younger age groups. Problems of transferring farm property within the family; the most difficult problems are encountered by the young people who have little or no family financial assistance. Suggested solutions to these problems.

### 52. Zoning and Other Measures to Prevent Undesirable Uses of Land

Zoning, easements, restrictive convenants, and other measures that have been used to prevent undesirable rural and urban uses from developing. The potential use of such measures, e.g., to prevent plow up of hazardous lands, undesirable roadside developments, etc. (Cf. New York Times series and Stuart Chase's "Zoning Goes to Town" in Reader's Digest, February,1957.)

52a. Rural Zoning and Community Planning (tentative)

52b. Experiences with Zoning of Communities Near Growing Cities (Loudoun, Fairfax, or Montgomery Counties, or another) (tentative)

## 53. Group Action to Develop and Protect Land

The private associations and governmental agencies that have been created to deal with problems requiring group action for the protection and development of land resources in private ownership. An increasingly serious concern is that of relating the aims and efforts of these diverse organizations in such a manner as to minimize conflict and waste and to achieve maximum beneficial results. The reasonable resolution of conflicts (over kind, location, and extent of projects, distribution of benefits and costs, and so on) among local and regional interests seems likely to become more difficult. Thus, the central problem at this point is becoming one of fitting together the relevant pieces--local, State, and national--into appropriate functioning systems for resource program purposes. The dimensions of this task are significantly increased by a recognition that water problems are inseparably linked with those of land and soil as such. The obvious need for consensus regarding intergovernmental allocations of responsibilities in these necessarily cooperative enterprises to reduce complication of the problem of local-State-Federal arrangements for public action will be discussed. The outlook is toward a period of continuing trial-and-error and experimentation with a variety of local, State, and intrastate organizational devices to meet the need for effective action within and among States and for cooperation with Federal agencies. Local soil conservation districts, drainage districts, irrigation districts, flood control districts, water supply districts, and multiple-purpose watershed and conservancy districts will be tried further and modified, joined, or discarded. With the certain increases of demand for water for nearly every purpose, adequate governmental mechanisms for decision making (e.g., with respect to claims of irrigators, domestic, and industrial users, and recreationists) become increasingly important. Urban needs clashing with irrigators' use of water may be the key element making inevitable the development in Eastern States of strong State agencies technically competent to adjudicate water disputes against a background of more adequate water policy, plans, and law. All these changes are likely to have important effects on the distribution of rights to land and water. The article will show that while the complexities and the stresses of the process of change will be great, both the process and the results can be kept in harmony with American democratic traditions if the organized intelligence of many groups is continuously brought to bear on the problem.

## 54. Arrangements to Facilitate Use, Development, and Protection of Public Lands

Federal agencies in the Department of the Interior (the Bureau of Land Management, the National Park Service, and the Bureau of Reclamation) and the Department of Agriculture (chiefly the Forest Service) have primary responsibility for administration of the Federal lands. Local organizations such as grazing districts, associations and advisory committees have significant and sometimes controversial functions in the scheme of policy making

and administration. There is need for a consideration of alternative federal-local arrangements with respect to many aspects of public land administration. Here again, water conservation is inextricably linked with land use and development problems; and areas far distant from the public lands may be affected by use and abuse of the public lands. Conflicting claims of diverse groups of users, would-be users, and others affected by the use will make it increasingly necessary to resolve local and regional conflicts and to project the interests of all the people in attaining, as nearly as may be, an optimum development of these important national resources. (Cf. previous chapters on public lands.)

## VII. LAND USE AND OWNERSHIP IN ALASKA, HAWAII, AND PUERTO RICO

These chapters summarize details of the uses, ownership, and prospective developments somewhat in accordance with the topics discussed for continental United States.

55. Alaska

56. Hawaii

57. Puerto Rico

## VIII. TOWARD THE BETTER USE OF LAND

Research, education, technical and financial assistance, and improved institutional arrangements have contributed much toward better use of land in the United States in recent years. Much remains to be done, however, to assure that unwarranted deterioration of land will not be permitted; that land will be employed in its highest use; that land development will take place when and where it is economically feasible; that some equality of access to land resources will be maintained; that land income will be widely dispersed in the population; and that individual and public interests in land will be reconciled in such a way that the welfare of groups indirectly dependent on land resources are adequately protected, and the national interest properly safeguarded.

Much also remains to be done in order to aid farmers in their management problems of combining what is already known, as well as new research results, into sustained and profitable uses of land. This needs to be accomplished in ways that will provide adequate supplies of food and fiber at low cost for the entire population, and at the same time yield satisfactory incomes to those who are engaged in full-time farming. Better opportunities also need to be available on the land for those who want to use it for part-time farming, or merely as a home in the country with some roots in the earth.

Much greater attention should be devoted to providing recreational opportunities on suitable and accessible land. Improvements are needed in use and management of both public and private forest lands if they are to meet the growing demands for timber.

The chapter should cite the importance of these and other needs, what is being done to meet them, what remains to be done, the progress that may be expected, and the obstacles that may be encountered. It might close with a review of the fortunate position that the United States holds with respect to its land and water resources, and that through skill and planning, arrangements have been developed that nearly always have been adequate for the occasion. The future, however, cannot be trusted to luck, but will require foresight and planning to assure judicious use of our land heritage and its maximum contribution to our well-being.

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